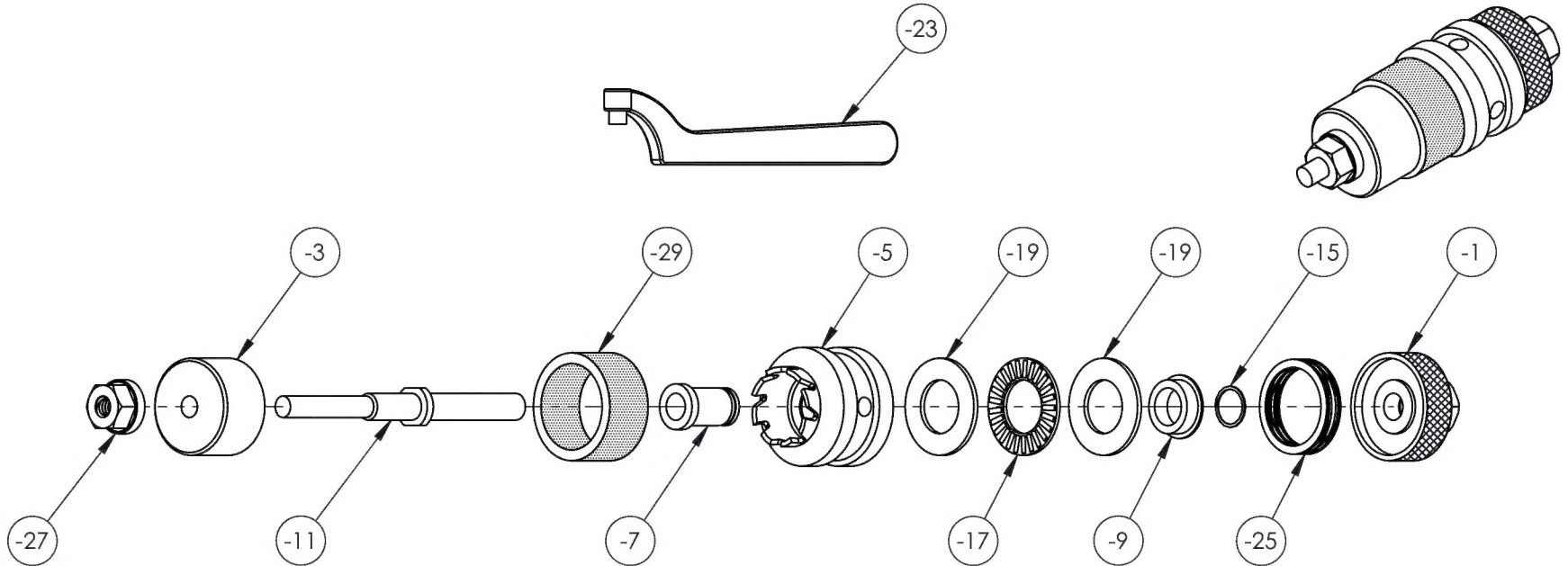


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BEARINGS AND TOOLS COVERED

BEARING #	TOOL #
406-310-403-101	RBSC7008-P
206-010-470-101	RBSC7028-P
406-312-100-101	RBSC7048-P
412-010-182-103	RBSC7188-P

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED TOOL # RBSC412-010-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CH'D -3 B FROM .312, CORRECTED -11 SCALE TO REFLECT PART REPRESENTATION PER S.E.	6/24/11	RJC	RW
4		-5 CH'D DIM SCHEME, REDREW SECTION VIEW.	7/13/2015	BIM	SE
5	15-0470	UPDATED TO NEW DRAFTING STANDARDS. ADDED NEW BEARING MODELS.	7/13/2015	SM	JAG
6	16-0112	UPDATED TO NEW STANDARD. ADDED CASE RSR GROUP #10137 TO BOM. -1 CH'D MAT'L WAS 1018 IS 1018/1020 CR. CH'D DIMS WAS Ø.625 IS Ø.63, WAS 5/16-24 UNF IS 5/16-24 UNF-2B, ADDED SPEC. -3 CH'D MAT'L WAS 4140 Q&T RND BAR IS 4140/4142. CH'D DIM WAS .032 X 45° IS .03 X 45°. ADDED HEAT TREAT AND SPEC. -5 CH'D DIMS WAS R.030 IS R.03, WAS .015 X 45° IS .02 X 45°, WAS R.015 MAX IS R.02 MAX. ADDED DIM 4X Ø.219 ±.23 EQUALLY SPACED, ADDED SPEC. -11 CH'D MAT'L WAS 4140 Q&T IS 4140/4142. ADDED HEAT TREAT AND SPEC. CH'D DIMS WAS 1/4-20 MACHINE THREADS IS 1/4-20 UNC-2A, WAS 5/16-24 MACHINE THREADS IS 5/16-24 UNF-2A.	8/11/2016	DEW	SM

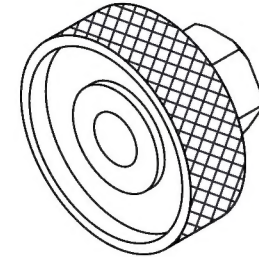
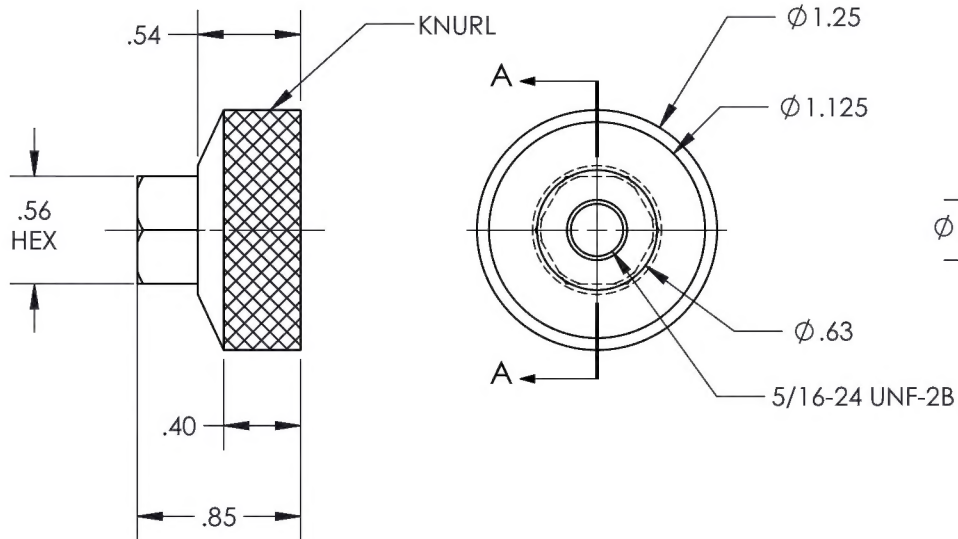


ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			-1	1	SPRING TENSIONER	1018/1020 CR		2
			-3	1	SEAT	4140/4142		3
			-5	1	CUTTER	O-1		4
			-7	1	GUIDE	BRONZE		5
			-9	1	BUSHING	BRONZE		6
			-11	1	STUD	4140/4142		7
		B/O	-15	1	SPIRAL EXTERNAL RETAINING RING	STEEL	Ø7/16 SHAFT (MCMaster-CARR # 91665A350)	1
		B/O	-17	1	THRUST BEARING	STEEL	Ø 5/8 ID. X 1-1/8 OD. X 5/64 (APPLIED # NTA-1018)	1
		B/O	-19	2	THRUST WASHER	STEEL	Ø 5/8 ID. X 1-1/8 OD. X 1/16 (APPLIED # TRB-1018)	1
		B/O	-23	1	FIXED PIN SPANNER WRENCH	STEEL	Ø 1-1/4 OD. X Ø 13/64 PIN (MCMaster-CARR # 5475A12)	1
		B/O	-25	1	CREST TO CREST SPRING	STEEL	SMALLEY CO. # CS112-H2	1
		B/O	-27	1	ROTATING FLANGE NUT	STEEL	1/4-20 ROTATING FLANGE NUT (MCMaster-CARR # 90477A029)	1
		B/O	-29	1	TOOTH GUARD (FOR SHIPPING ONLY)	VINYL	SEE -5 ØB PAGE 4 FOR INSIDE DIA. OF TUBE X 5/8 LENGTH	1
		B/O	-31	1	CASE	PLASTIC	(RSR GROUP # 10137)	N/S

DART AEROSPACE			
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS			
DWG NO. RBSC7###-P			REV 6
MAT'L		UNLESS OTHERWISE SPECIFIED	
HEAT TREAT		DIMENSIONS ARE IN INCHES	
FINISH		.XXX ± .005 FRACTIONS ± 1/8	
SPEC		.XX ± .01 ANGLES ± 5°	
DRAWN BY: MACKOVJAK		.X ± .1 SURFACES = 125✓	
CHECKED: DUERFELDT		1. BREAK ALL SHARP EDGES	
OPPS APPR: ANDERSON		.015 x 45° OR .015R	
QA APPR: LINDSAY		2. DIMENSIONAL LIMITS APPLY	
APPROVED: GILBERT		AFTER PLATING	
SCALE 1:2		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
DATE 7/13/2015		USED ON MODEL	
SHEET 1 OF 7			

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188 TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING # 406-312-100-101 PER E.B.	5/2/11	RJC	
6	16-0112	-1 CH'D MAT'L WAS 1018 IS 1018/1020 CR. CH'D DIMS WAS $\varnothing .625$ IS $\varnothing .63$, WAS 5/16-24 UNF IS 5/16-24 UNF-2B. ADDED SPEC.	8/11/2016	DEW	SM



SECTION A-A

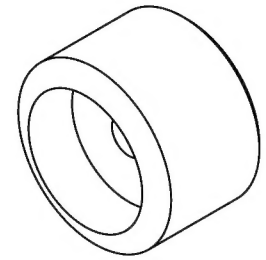
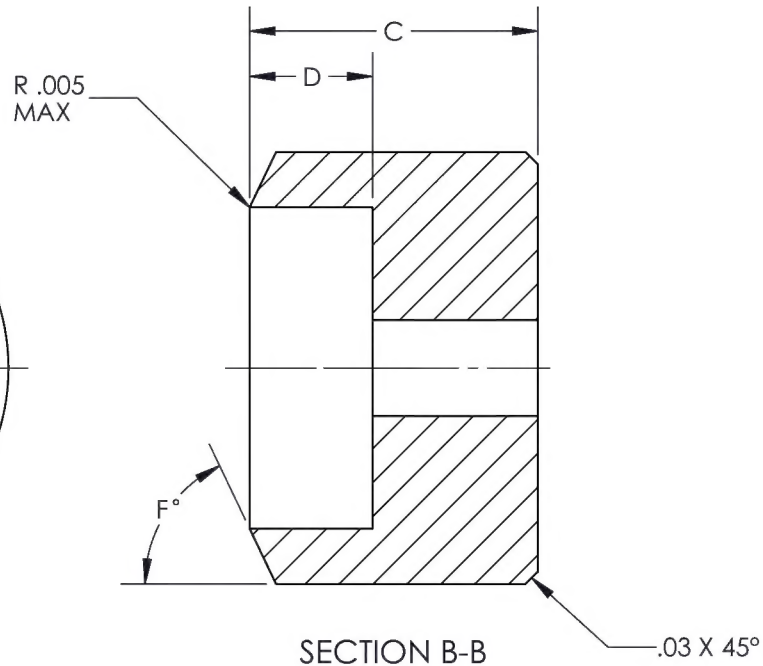
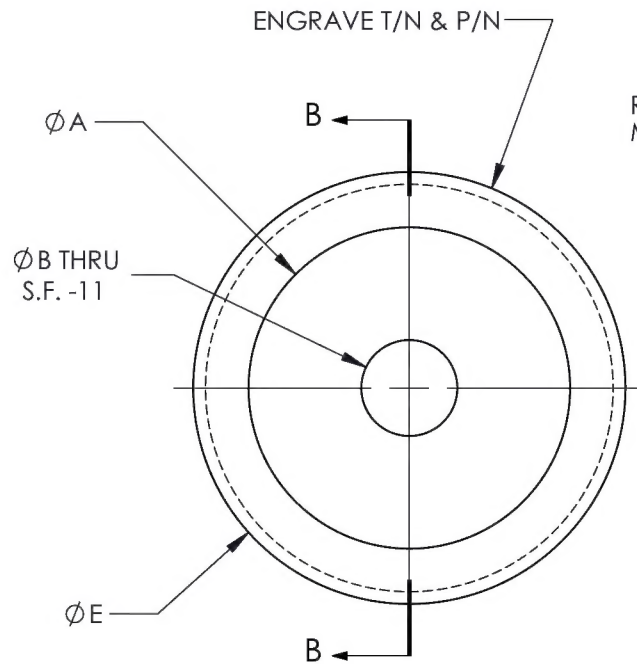
(1)

SPRING TENSIONER

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO. RBSC7###-P-1	REV 6
MAT'L 1018/1020 CR	UNLESS OTHERWISE SPECIFIED
HEAT TREAT	DIMENSIONS ARE IN INCHES
FINISH BLACK OXIDE	.XXX \pm .005 FRACTIONS \pm 1/8
SPEC QMSI-6.2.2, B.O. REV D	.XX \pm .01 ANGLES \pm 5°
DRAWN BY: MACKOVJAK	.X \pm .1 SURFACES = 125°
CHECKED: DUERFELDT	1. BREAK ALL SHARP EDGES
OPPS APPR: ANDERSON	.015 x 45° OR .015R
QA APPR: LINDSAY	2. DIMENSIONAL LIMITS APPLY
APPROVED: GILBERT	AFTER PLATING
SCALE 1:1	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
DATE 7/9/2015	USED ON MODEL
SHEET 2 OF 7	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED TOOL#RBSC412-010-182-103-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CH'D -3 B FROM 3.12 PER S.E.	6/24/11	RJC	RW
6	16-0112	-3 CH'D MAT'L WAS 4140 Q&T RND BAR IS 4140/4142. CH'D DIM WAS .032 X 45° IS .03 X 45°. ADDED HEAT TREAT AND SPEC.	8/11/2016	DEW	SM



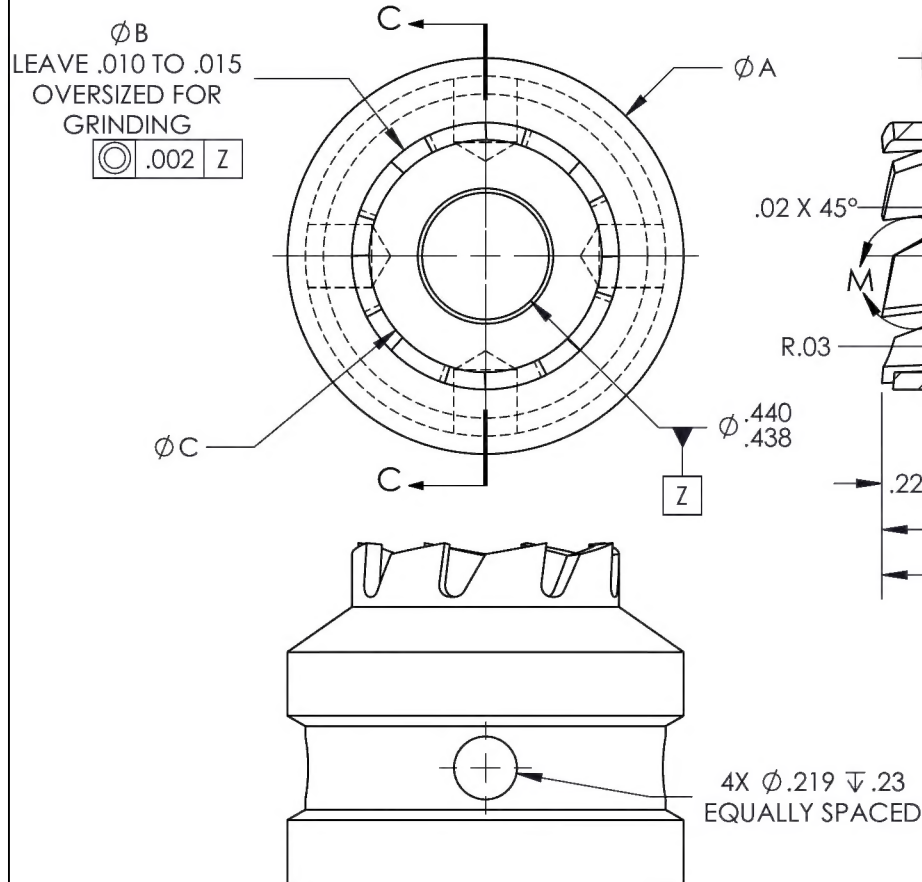
TOOL NUMBER	Ø A +.002 -.000	Ø B +.002 -.000	C +.010 -.010	D +.010 -.010	Ø E +.000 -.002	F +.5 -.0
RBSC7008-P	.968	.250	.750	.375	1.250	64.5
RBSC7028-P	.837	.250	.750	.320	1.125	64.5
RBSC7048-P	1.000	.250	.750	.237	1.125	90
RBSC7188-P	1.063	.250	.750	.375	1.500	64.5

(-3)
SEAT

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO.	REV 6
RBSC7###-P-3	
MAT'L 4140/4142	UNLESS OTHERWISE SPECIFIED
HEAT TREAT RC 28-32	DIMENSIONS ARE IN INCHES
FINISH BLACK OXIDE	.XXX ± .005 FRACTIONS ± 1/8
SPEC QMSI-6.2.2, B.O. REV D	.XX ± .01 ANGLES ± 5°
	.X ± .1 SURFACES = 125°
DRAWN BY: MACKOVJAK	1. BREAK ALL SHARP EDGES
CHECKED: DUERFELDT	.015 x 45° OR .015R
OPPS APPR: ANDERSON	2. DIMENSIONAL LIMITS APPLY
QA APPR: LINDSAY	AFTER PLATING
APPROVED: GILBERT	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
SCALE 2:1	DATE 7/9/2015
	SHEET 3 OF 7

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
4		-5 CH'D DIM SCHEME, REDREW SECTION VIEW.	1/7/13	BIM	SE
6	16-0112	-5 CH'D DIMS WAS R.030 IS R.03, WAS .015 X 45° IS .02 X 45°, WAS R.015 MAX IS R.02 MAX. ADDED DIM 4X Ø.219 ∇ .23 EQUALLY SPACED. ADDED SPEC.	8/11/2016	DEW	SM



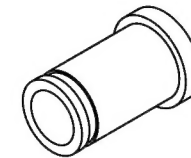
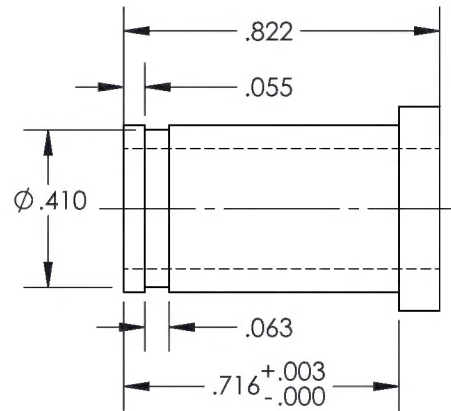
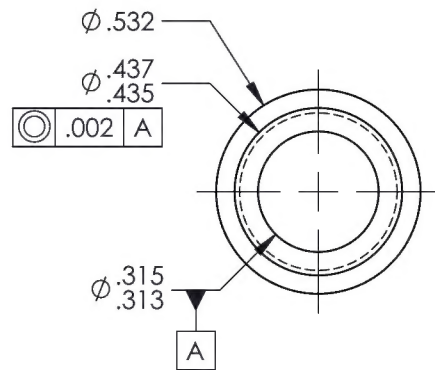
TOOL NUMBER	Ø A +.000 -.010	Ø B +.000 -.002	Ø C +.000 -.005	D REF.	E +.010 -.010	F TOOTH AMT.	G
RBSC7008-P	1.375	1.0185	.899	.220	1.187	8	.578
RBSC7028-P	1.375	.927	.807	.220	1.187	8	.578
RBSC7048-P	1.500	1.115	.995	.220	1.187	10	.578
RBSC7188-P	1.500	1.115	.995	.220	1.187	10	.578

(-5)
CUTTER

DART AEROSPACE			
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS			
DWG NO. RBSC7###-P-5			REV 6
MAT'L O-1		UNLESS OTHERWISE SPECIFIED	
HEAT TREAT RC 55-60		DIMENSIONS ARE IN INCHES	
FINISH BLACK OXIDE		.XXX ± .005 FRACTIONS ± 1/8	
SPEC QMSI-6.2.2, B.O. REV D		.XX ± .01 ANGLES ± 5°	
DRAWN BY: MACKOVJAK		.X ± .1 SURFACES = 125°	
CHECKED: DUERFELDT		1. BREAK ALL SHARP EDGES	
OPPS APPR: ANDERSON		.015 x 45° OR .015R	
QA APPR: LINDSAY		2. DIMENSIONAL LIMITS APPLY	
APPROVED: GILBERT		AFTER PLATING	
SCALE 3:2		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
DATE 7/13/2015		USED ON MODEL	
SHEET 4 OF 7			

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	



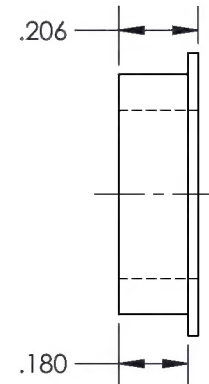
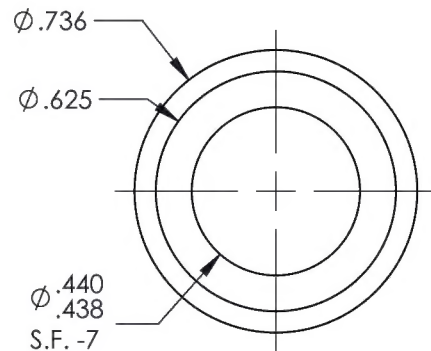
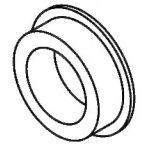
(-7)

GUIDE

DART AEROSPACE																					
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS																					
DWG NO. RBSC7###-P-7	REV 6																				
<table border="1"> <tr> <td>MAT'L BRONZE</td> <td>UNLESS OTHERWISE SPECIFIED</td> </tr> <tr> <td>HEAT TREAT</td> <td>DIMENSIONS ARE IN INCHES</td> </tr> <tr> <td>FINISH</td> <td>.XXX \pm .005 FRACTIONS \pm 1/8</td> </tr> <tr> <td>SPEC</td> <td>.XX \pm .01 ANGLES \pm 5°</td> </tr> <tr> <td></td> <td>.X \pm .1 SURFACES = 125✓</td> </tr> <tr> <td>DRAWN BY: MACKOVJAK</td> <td>1. BREAK ALL SHARP EDGES</td> </tr> <tr> <td>CHECKED: DUERFELDT</td> <td>.015 x 45° OR .015R</td> </tr> <tr> <td>OPPS APPR: ANDERSON</td> <td>2. DIMENSIONAL LIMITS APPLY AFTER PLATING</td> </tr> <tr> <td>QA APPR: LINDSAY</td> <td>3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009</td> </tr> <tr> <td>APPROVED: GILBERT</td> <td>USED ON MODEL</td> </tr> </table>		MAT'L BRONZE	UNLESS OTHERWISE SPECIFIED	HEAT TREAT	DIMENSIONS ARE IN INCHES	FINISH	.XXX \pm .005 FRACTIONS \pm 1/8	SPEC	.XX \pm .01 ANGLES \pm 5°		.X \pm .1 SURFACES = 125✓	DRAWN BY: MACKOVJAK	1. BREAK ALL SHARP EDGES	CHECKED: DUERFELDT	.015 x 45° OR .015R	OPPS APPR: ANDERSON	2. DIMENSIONAL LIMITS APPLY AFTER PLATING	QA APPR: LINDSAY	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	APPROVED: GILBERT	USED ON MODEL
MAT'L BRONZE	UNLESS OTHERWISE SPECIFIED																				
HEAT TREAT	DIMENSIONS ARE IN INCHES																				
FINISH	.XXX \pm .005 FRACTIONS \pm 1/8																				
SPEC	.XX \pm .01 ANGLES \pm 5°																				
	.X \pm .1 SURFACES = 125✓																				
DRAWN BY: MACKOVJAK	1. BREAK ALL SHARP EDGES																				
CHECKED: DUERFELDT	.015 x 45° OR .015R																				
OPPS APPR: ANDERSON	2. DIMENSIONAL LIMITS APPLY AFTER PLATING																				
QA APPR: LINDSAY	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009																				
APPROVED: GILBERT	USED ON MODEL																				
SCALE 2:1	DATE 7/10/2015 SHEET 5 OF 7																				

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	



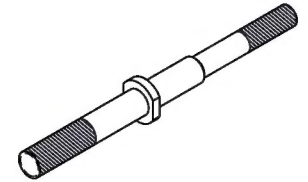
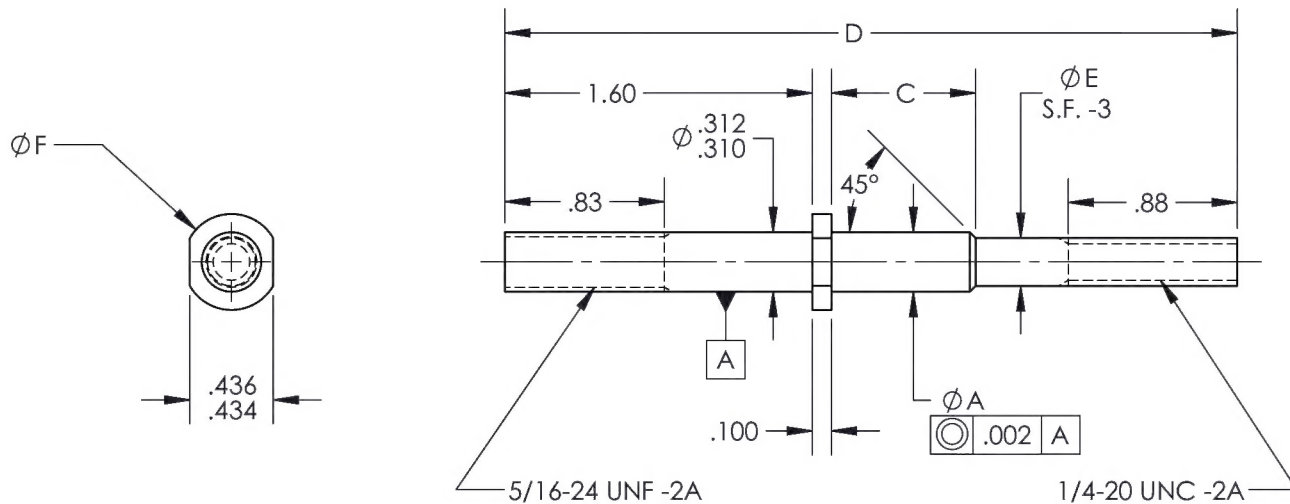
-9

BUSHING

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO. RBSC7###-P-9	REV 6
MAT'L BRONZE	
UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
.XXX ± .005 FRACTIONS ± 1/8	
.XX ± .01 ANGLES ± 5°	
.X ± .1 SURFACES = 125°	
SPEC	
1. BREAK ALL SHARP EDGES	
.015 x 45° OR .015R	
2. DIMENSIONAL LIMITS APPLY	
AFTER PLATING	
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
DRAWN BY: MACKOVJAK	
CHECKED: DUERFELDT	
OPPS APPR: ANDERSON	
QA APPR: LINDSAY	
APPROVED: GILBERT	
USED ON MODEL	
SCALE 2:1	DATE 7/10/2015
SHEET 6 OF 7	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CORRECTED -11 SCALE TO REFLECT PART REPRESENTATION PER S.E.	6/24/11	RJC	RW
6	16-0112	-11 CH'D MAT'L WAS 4140 Q&T IS 4140/4142. ADDED HEAT TREAT AND SPEC. CH'D DIMS WAS 1/4-20 MACHINE THREADS IS 1/4-20 UNC-2A, WAS 5/16-24 MACHINE THREADS IS 5/16-24 UNF-2A.	8/11/2016	DEW	SM



TOOL NUMBER	ϕA +.000 -.002	B	C +.000 -.020	D +.020 -.010	E +.000 -.002	ϕF
RBSC7008-P	.310	1/4-20 UNC	.750	3.875	.250	.500
RBSC7028-P	.310	1/4-20 UNC	.750	3.812	.250	.500
RBSC7048-P	.373	1/4-20 UNC	.680	4.000	.250	.500
RBSC7188-P	.310	1/4-20 UNC	.680	3.875	.250	.500

(-11)

STUD

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO. RBSC7###-P-11	REV 6
MAT'L 4140/4142	UNLESS OTHERWISE SPECIFIED
HEAT TREAT RC 28-32	DIMENSIONS ARE IN INCHES
FINISH BLACK OXIDE	.XXX ± .005 FRACTIONS ± 1/8
SPEC QMSI-6.2.2, B.O. REV D	.XX ± .01 ANGLES ± 5°
DRAWN BY: MACKOVJAK	.X ± .1 SURFACES = 125
CHECKED: DUERFELDT	1. BREAK ALL SHARP EDGES
OPPS APPR: ANDERSON	.015 x 45° OR .015R
QA APPR: LINDSAY	2. DIMENSIONAL LIMITS APPLY
APPROVED: GILBERT	AFTER PLATING
SCALE 1:1	DATE 7/13/2015
SHEET 7 OF 7	